

Reptile Dissection Lab

Today, you will be dissecting a black tailed spiny iguana (*Ctenosaura similis*). The goal of the dissection is to observe morphological structures that we've discussed in class, and note how their form reflects their function.

As you carry out the lab, you will encounter discussion questions. With your lab partner, answer these questions and take notes. The answers to these questions will be very useful to you when preparing your essay, which is due next week.

Instructions

Supplies: dissection kit

Background

Starting from domain and going to species, state the lizard's taxonomy.

What is the diet and habitat preference of these lizards? (This info will help answer some of the future questions.)

What record did these lizards set in the Guinness Book of World Records?

What state have these lizards been introduced in?

A. Legs and tail

Observe the legs and feet of your lizard. Compare the structure of the front leg to the hind leg. Pay close attention to the claws to help answer the discussion question. Peel back the skin on the front leg and try to find the bicep and tricep. Peel back the skin on the hind leg to view the muscle definition.

Discussion questions: How have the claws adapted to their habitat preference? Where would you expect these iguanas to live if they had smaller claws? How have the leg muscles adapted to running on the ground?

Next, you will look at the tail of the lizard. First, measure the snout-vent length of your lizard (tip of snout to vent). Then measure the tail length (vent to tip of tail). What proportion of the total body length of this lizard is the tail? Try to break the tail by pulling, then break the tail again (in another place) by slicing through it with a scalpel. Observe the structures that are present in this lizard's tail. If you have a big lizard, try to dissect part of the tail down to the vertebrae to note the internal structure of the tail.

Discussion questions: These lizards are capable of autotomy. What structures do you observe in the tail that might be related to this? Do you think that your lizard has regrown any part of its tail?

B. Head and Mouth

You will need to make incisions to open your lizard's mouth. Force the mouth open slightly, and make ~2 cm cuts starting in each corner of the mouth. You will know your cuts are long enough when you can open the lizard's mouth to a wide angle. Observe the tongue and teeth.

Discussion questions: What does the structure of the tongue tell you about how it is being used by the lizard for feeding? What about the teeth? If these were primarily carnivores, how would the teeth differ? How do these lizards differ from amphibians? These lizards are iguanids; what does this mean for your interpretation of the tongue structure?

C. Internal organs

Open the body cavity to observe the lizard's internal organs. Turn the lizard over so that its ventral side is facing up, and pin the lizard down well. Make an incision through the skin from the posterior of the belly to the anterior, so that the end of the cut is anterior to the front limbs of the lizard. Make perpendicular cuts at the posterior and anterior ends of this incision. Peel back and pin the two flaps of skin you just created. As you cut *turn the scissors on their side* to avoid puncturing any internal organs.

Draw the lizard and try to identify the following organs: heart, lungs, stomach, liver, kidneys, bladder. Identify and describe as many other internal organs as possible.

Discussion questions: Compare the structure of the skin and lungs with an amphibian. How do these lizards control their intake of oxygen? Amniotes have a sternum; do amphibians? What are the consequences of this? If these lizards were carnivores, would you expect them to have a longer or shorter small intestine?

Essay (1-page single space)

If you had to come up with some research that used these iguanas, what would you study, the importance of the work, and how?

Example: These lizards were being used to determine the amount of stored energy in the body of these lizards. The fat tissues were extracted and the body was grinded into a powder. Using a bomb calorimeter, the amount of energy could be determined in the body.